US Army Corps of Engineers
HUNTSVILLE ENGINEERING AND SUPPORT CENTER

U.S. DEPARTMENT OF DEFENSE PROGRAM

BASE REALIGNMENT AND CLOSURE

ORDNANCE, AMMUNITION AND EXPLOSIVES

FINAL

ARCHIVES SEARCH REPORT

CONCLUSIONS AND RECOMMENDATIONS

CAMP BONNEVILLE

CLARK COUNTY, WASHINGTON

JULY 1997

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(UNDER SEPARATE COVER)

1.0 INTRODUCTION

1.1 AUTHORITY

Since 1988, Congress has enacted legislation providing for the closure, in part or in whole, of military bases/facilities and the realignment of others. The principal mechanism for implementing the policy in both statutes has been an independent, bipartisan commission. Two of the most pressing issues are (1) providing assistance to local communities economically impacted by base closures and (2) establishing a cost-effective program of environmental clean-up at bases prior to their disposition.

During the decade of the 1980's, no major military bases were closed, largely because of procedural requirements established by Congress. After several legislative efforts to break the deadlock failed, Congress introduced a new base closure procedure in Public Law (PL) 100-526, enacted October 24, 1988. The statute established a bipartisan commission to make recommendations to Congress and the Secretary of Defense on closures and realignments.

On December 28, 1988, the commission issued its report, recommending closure of eighty-six installations, partial closure of five, and realignment of fifty-four others. The Secretary of Defense approved its recommendation on January 5, 1989. Since the commission approach adopted by Congress was successful, new base closure legislation was introduced (PL 101-510) which also relied upon the services of an independent commission. This commission, in accordance with a statutory provision, met in 1991, 1993 and 1995.

The Defense Base Closure and Realignment of 1990 (1990 Base Closure Act), Public Law 101-510, established the process by which DoD installations would be closed and/or realigned. Camp Bonneville, located in Clark County, Washington, was selected for closure under the 1995 Base Realignment and Closure (BRAC) process.

On April 5, 1990, U.S. Army Engineering and Support Center, Huntsville (USAESCH) was designated as the USACE Mandatory Center of Expertise (MCX) and Design Center for Ordnance and Explosives (OE). USAESCH will also design and implement OE remediation programs for other branches of the Department of Defense when requested. In cooperation with the Support Center and the Seattle District, the U.S. Army Corps of Engineers St. Louis District has been assigned the task of preparing an Archives Search Report for Camp Bonneville, Washington, detailing ordnance, ammunition, and explosives, suspected chemical warfare materials (CWM) and any other warfare materials (i.e. radiological, biological).

1.2 SCOPE

The history of Camp Bonneville was investigated through archives searches for the types, quantities, and probable locations of ordnance items abandoned by DoD prior to relinquishing ownership of Camp Bonneville. Information contained herein is based on the review of existing historical documents and maps, interviews, site inspection, and descriptions of known or suspected contamination.

2.0 CONCLUSIONS

2.1 HISTORICAL ORDNANCE USAGE SUMMARY

Troops from Vancouver Barracks began to use land near Proebstel, WA, for a target range in 1910. In 1926, the land was officially named Camp Bonneville. During WWII, Camp Bonneville continued to be used as a training area for Vancouver Barracks, part of the Portland Sub-port of Embarkation. In 1950, the army rehabilitated many of the buildings and systems at the cantonment areas and the ranges. In the 1950's the training possibilities of the post expanded when an additional 820 acres was leased from the State of Washington.

Since 1947, Camp Bonneville provided a training area for a variety of military units from the U.S. Army, National Guard, Reserves, and U.S. Air Force. Federal, state, and local law enforcement agencies also used the post.

2.2 OE ACTIVITIES

2.2.1 RANGES AND TRAINING AREAS

The army started target practice on a rifle range in 1910. The army placed fourteen short-range and seven long-range targets in the valley which was 350 yards wide and 2000 yards long. In 1918, the range contained twenty-four targets. At some point prior to 1929, a machine gun and howitzer range was added to the training facilities. The 1959 Property inventory includes the following ranges: a known distance range, a pistol range (20 targets), submachine gun range (21 targets); a live hand grenade range, and a mortar training shell range. There is neither a machine gun range nor an anti-aircraft target range listed on this inventory under the heading "Training Areas," but the list includes several targets, target storage buildings, and range control buildings for these ranges. These targets are also depicted on an historical map dated 28 May 1943. Live artillery firing occurred occasionally at Camp Bonneville. Artillery units conducted firing exercises about twice a year from 1969-1985, resulting in approximately 50 rounds being fired into the impact area during each training session. Sometime in the 1970's, however, the military switched to sub-caliber rounds for training purposes.

Historical maps dated between 1926 and 1994 identified many additional ranges and firing points located throughout Camp Bonneville. These included the following:

Rifle Range
Machine Gun Range
Anti-Aircraft Range--500" miniature (includes overhead, parachute, climbing and diving, and horizontal targets)
Pistol Range
1000" Rifle and Light Machine Gun Range
Infiltration Course
Sub-machine Gun Range
Artillery Impact Area
Field Firing Area
Record Firing Range
1000" and Moving Target Range
Artillery Firing Points
Mortar Training Shell Course
Practice Grenade Range
Live Grenade Range
Rifle Grenade
Rocket Launcher
TF-1 25M
Free Firing .30 caliber Machine Gun Range
Mortar Positions
Close Combat Course
Night Fire, KD Range
M60 and 25M Range
14.5 Range
LAW, sub-caliber and M203 Practice Range
25 Meter Range
M16 Qualification Range
FBI Range
ARF Range
Combat Pistol Range
M203 Grenade Launcher (HE) Range
M-31 Field Artillery Range
Known Distance and Train Fire Range
25 Meter and Machine Gun Range

Additional training in maneuvers, bivouacking and tactics could be accomplished on the many training areas (TA #1 through TA #18) at Camp Bonneville. Occasionally vehicles would support this training, and the use of smoke or riot control agents could be authorized.

It is possible that unserviceable munitions may have been burned in the demolition areas. The 1971 agreement between the Army and Air Force says that all munitions had to be destroyed by burning or detonation. A 1986 amendment allowed unserviceable munitions to be destroyed by a high order detonation only, and later in 1993, the destruction of unserviceable munitions by any method was not permitted.

2.2.2 AMMUNITION STORAGE FACILITIES

A building list from 1946 lists two Ammunition Magazines, buildings 2950 and 3754. The property inventory produced in 1959 when Camp Bonneville became a sub-installation of Fort Lewis shows that building 2950 was still used as a Ammunition Storage facility, but it does not show a building 3754. The Environmental Baseline Survey (EBS) building list notes three Ammunition Bunkers, buildings 2950-52, and it lists the construction date as 1976.

2.3 CWS ACTIVITIES

Several documents from the 1930's discuss the expenditure of detonating gas ID sets from Vancouver Barracks' supply. These documents all refer to the use of one set per instance, but they do not specify the location or extent of the training involved (Assistant Adjutant General 1935; Office of the Chief of Chemical Warfare Service 1936; Chemical Warfare Service 1937; Headquarters, Ninth Corps Area 1937). It is known, however, that Camp Bonneville could have been the location of this activity. It had two gas chambers (Woodward-Clyde 1996a: Section 4.2.6), and it also had a 100 yard by 100 yard mustard training area (Hoaleben 1947: 731). The location of the mustard training area is not provided in Hoaleben's *History of CWS Activities at Ports of Embarkation*, but it may have been in the vicinity of the "old gas chamber" identified by the Environmental Baseline Survey (EBS). An undated map from the Real Estate Office at Fort Lewis has a hand-written note in this area which reads "Gas ID" (n.a. n.d.g). Other Chemical Warfare Service items mentioned in historical documentation include gas masks, smoke pots, demustardizing agents and apparatuses, tear gas capsules, and land mines. These references were obtained by researchers by looking at files concerning Vancouver Barracks (n.a. n.d.b; Headquarters, Ninth Corps Area 1934, 1940).

According to the EBS, the "old gas chamber" described above was burned in the 1970's, and research has discovered two possible locations for the second gas chamber in Camp Bonneville's cantonment area. The first possible building is T-1834, built in 1927. The Real Property Utilization Reports assembled by the Fort

Lewis Real Estate Office, however, lists two separate buildings as the gas chamber: T-1834 and T-1864. In 1982, building T-1834 is listed as the CBR (chemical, biological, and radiological) chamber--later known as NBC (nuclear, biological and chemical) chamber, but the following year's survey says that it is building T-1864. The 1994 report, again, lists T-1834 as the gas chamber. This discrepancy is possibly caused by a typographical error (n. a. 1982, 1983a, 1994; Woodward-Clyde 1996a: Section 3.3).

2.4 POTENTIAL AND CONFIRMED ORDNANCE PRESENCE

The potential for ordnance exists throughout the majority of the installation. Ranges, training information, and locations of found ordnance are compiled on PLATES 28 through 32. PLATE 33 identifies Areas Recommended for Further Action with respect to ordnance. This area consists of approximately 3225 acres, of which 725 acres is leased from the State of Washington.

The types of unexploded ordnance which may be present range from small arms ammunition to 155mm artillery rounds, up to 4.2 inch mortars, 2.36" and 3.5" rockets, and grenades (hand and rifle). Training devices may also be found throughout the post.

Ordnance which has been found throughout the post includes a 2.36" Rocket which was uncovered near the sewage treatment facility, 3.5" Rockets, 40mm grenades (HE), 3-inch Trench Mortar (sandfilled), 105mm, 155mm, phosphorous grenade, and several small arms ammunition. The locations of most of these items can be found on PLATE 28 -- Locations of Found Ordnance. Based on interviews with people knowledgeable about Camp Bonneville, there have also been items found off post near the post's eastern boundary and north of the Camp Bonneville cantonment area. This indicates that ordnance was fired farther than the range safety fans depicted on maps.

3.0 AREAS OF INTEREST

PLATE 33 identifies Areas Recommended for Further Action with respect to OE based on historical documentation reviewed, interviews, and a site inspection. This area covers all ranges and their safety fans, mortar positions, artillery firing points, demolition areas, impact area, and ammunition storage area. Also included in this area is the sewage treatment facility where a rocket was uncovered recently. The total acreage identified consists of approximately 3225 acres, of which 725 acres is leased from the State of Washington.

The types of ordnance which may be present include small arms ammunition, 37mm - 155mm artillery rounds, 4.2 inch - 81mm mortars, 2.36" and 3.5" rockets, and grenades (hand and rifle). Training devices may also be found throughout the post.

Items such as small arms ammunition, rifle grenades, and rockets could be found on the southeastern leased parcel. Ordnance which may be found in the northeastern leased parcel consists of artillery rounds--up to 155mm, mortars--up to 4.2 inch, small arms ammunition, and rockets. Training items could be found in both parcels.

4.0 RECOMMENDATIONS

Statistical sampling for unexploded ordnance to delineate those areas contaminated with UXO is recommended. Those areas with the greatest potential for ordnance are denoted on PLATE 33--Areas Recommended for Further Action.

APPENDIX A

ACRONYMS

ACRONYMS

AA	Anti-Aircraft
AEC	Army Environmental Center
AGO	Adjutant General's Office
AP	Armor Piercing
APDS	Armor Piercing Discarding Sabot
APERS	Antipersonnel
APT	Armor Piercing with Tracer
ARF	Automated Record Fire
ASR	Archives Search Report
Aux	Auxiliary
BAR	Browning Automatic Rifle
BD	Base Detonating
BD/DR	Building Demolition/Debris Removal
BE	Base Ejection
BRAC	Base Realignment And Closure
CADD	Computer-Aided Design/Drafting
Cal	Caliber
CBDA	Chemical and Biological Defense Agency
CBDCOM	Chemical and Biological Defense Command
CBR	Chemical, Biological, Radiological
CCC	Civilian Conservation Corps
CE	Corps of Engineers
CEHNC	Corps of Engineers, Huntsville Division
CELMS	Corps of Engineers, Lower Mississippi Valley, St. Louis District
CEMVS	Corps of Engineers, Mississippi Valley, St. Louis District
CENPS	Corps of Engineers, North Pacific, Seattle District
CENWS	Corps of Engineers, Northwest, Seattle District
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
CMTC	Citizens Military Training Camps
COE	Chief of Engineers
COMP	Composition
CTG	Cartridge
CSM	Chemical Surety Material
CSM	Command Sergeant Major

ACRONYMS

CWM	Chemical Warfare Material
CWS	Chemical Warfare Service
DA	Department of the Army
DARCOM	Development and Readiness Command
DERA	Defense Environmental Restoration Account
DoD	Department of Defense
EBS	Environmental Baseline Survey
EE/CA	Engineering Evaluation/Cost Analysis
EIB	Expert Infantrymen Badge (Course)
EIS	Environmental Impact Statement
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
ERDA	Environmental Restoration Defense Account
FBI	Federal Bureau of Investigation
FS	Feasibility Study
FWS	(U.S.) Fish and Wildlife Service
GIS	Graphic Information System
GSA	General Services Administration
HE	High Explosive
HEAT	High Explosive Anti-Tank
HEI	High Explosive Incendiary
HEP	High Explosive Plastic
HTRW	Hazardous Toxic and Radioactive Waste
HTW	Hazardous and Toxic Waste
IAS	Initial Assessment Study
ILLUM	Illuminating
IRP	Installation Restoration Program
KD	Known Distance
LAW	Light Anti-Tank Weapon
MCX	Mandatory Center of Expertise
MG	Machine Gun
MG	Major General
mm	Millimeter
MT	Mechanical Time
MTSQ	Mechanical Time Super Quick
NARA	National Archives and Records Administration
NBC	Nuclear Biological Chemical
NCDC	National Climatic Data Center
NCP	National Contingency Plan

ACRONYMS

NFS	National Forest Service
NG	National Guard
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NOFA	No Further Action
NPRC	National Personnel Records Center
NRC	National Records Center
OE	Ordnance and Explosives
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PD	Point Detonating
PIBD	Point Initiating, Base Detonating
PL	Public Law
POE	Port of Embarkation
POW	Prisoner of War
PRI	Preliminary Rifle Instruction
PTC	Practice Training Combat
QASAS	Quality Assurance Specialist Ammunition Surveillance
RA	Removal Action
RAC	Risk Assessment Code
RD	Remedial Design
RG	Record Group
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasability Study
ROTC	Reserve Officer Training Corps
SARA	Superfund Amendments and Reauthorization Act
SCS	Soil Conservation Service
SLD	St. Louis District, Corps of Engineers
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SWMU	Solid Waste Management Units
TECOM	Test Evaluation Command
TEU	Technical Escort Unit
TF	Training Field
TNT	Trinitrotoluene
TP	Target Practice
USA	United States of America
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School

ACRONYMS

USAED	U.S. Army Engineer District
USAESCH	U.S. Army Engineering and Support Center, Huntsville, Alabama
USAF	U.S. Air Force
USANG	U.S. Army National Guard
USATHMA	U.S. Army Toxic and Hazardous Materials Agency
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	Unexploded Ordnance
WAA	War Assets Administration
WD	War Department
WNRC	Washington National Records Center

APPENDIX B

RISK ASSESSMENT CODE FORM

17 March 1995
Previous editions obsolete

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVES (OE) SITE

SITE NAME: CAMP BONNEVILLE
SITE LOCATION: CLARK COUNTY, WASHINGTON
DATE COMPLETED: 4 JUNE 1997

RATER'S NAME: ROCHELLE ROSS
PHONE NO.: (314) 331-8784
ORGANIZATION: CEMVS-ED-P
RAC SCORE: 1

OE RISK ASSESSMENT: This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential EXO hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OE sites should view the CEHND videotape entitled "A Life Threatening Encounter: OE."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE (Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms, Complete Round (.22 cal - .50 cal)	1
Small Arms, Expended	0
Conventional Ordnance and Ammunition (Select the largest single value)	10

What evidence do you have regarding conventional EXO? Ranges within the camp consisted of small arms, grenade (rifle and hand), rockets, mortars 4.2", 60mm, 81mm & subcals), artillery (105mm-155mm, smaller, & subcal). Also located on Camp Bonneville

were demolition areas and a large impact area. Training areas encompassed almost all of the camp. Practice mines could have been used in these areas. An ammunition storage could have stored fuzes, blasting caps, etc. 105mm, 155mm, 2.36" rocket, 40mm grenades, 14.5mm rounds have been found. Items found include 2.36" rockets, 40mm grenades, 105mm, 155mm, small arms, mortars, and sub-cal devices.

B. Pyrotechnics (For munitions not described above) VALUE

Munitions (Container) containing White Phosphorous (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munitions Containing A Flame or Incendiary Material (i.e.,Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	10

What evidence do you have regarding pyrotechnics? The rockets trained with could have contained WP, incendiary material, or other smoke. Flares, signals, simulators, and screening smokes could have been used in the training areas. A phosphorous grenade was found on the installation.

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	8

What evidence do you have regarding bulk explosives? Located at Camp Bonneville was an ammunition storage area--unknown type and quantity of ordnance & explosives; and two demolition areas. Probably had, at least, secondary explosives in the bunkers.

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance;

	VALUE
Solid of Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? No evidence.

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5
Chemical and Radiological (Select the largest single value)	20

What evidence do you have regarding chemical/radiological OE? Located at Camp Bonneville were gas chambers and a 100 square yard Mustard Training Area (location unknown). Identified on a map were the words, "Gas ID". Riot control agents could have been used within the training areas. However, it is not likely that War Gas Identifictation sets still exist.

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TOTAL HAZARD SEVERITY VALUE

(Sum of the Largest Values for A through E--Maximum of 61) 48

Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	III	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

* APPLY HAZARD SEVERITY CATEGORY TO TABLE 3.
** IF HAZARD SEVERITY IS 0, YOU DO NOT NEED TO COMPLETE PART II. PROCEED TO PART III AND USE A RAC SCORE OF 5 TO DETERMINE YOUR APPROPRIATE ACTION.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD
(Circle all values that apply)

A. Location of OE Hazards

	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	2
Location (Select the single largest value)	5

What evidence do you have regarding location of OE? Items could be on the surface and subsurface. Items have been found on the surface.

B. Distance to nearest inhabited locations or structures likely to be at risk from OE hazard (roads, play

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	5

What are the nearest inhabited structures? Worst case scenario: Range fans extend to the installation boundary. Therefore, ordnance could be found at the boundary. The eastern fenceline of the artillery impact area is within 1/2 mile from the installation boundary. A 105mm round was found along this fenceline. Items have been found just off the roads within the installation.

C. Numbers of buildings within a 2 mile radius measured from the OE hazard area, not the installation

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	3

Narrative. If items are found near the center of the installation, then only a few target houses and the cantonment areas are within a 2 mile radius. As you move closer to the boundary, more private residences will be affected. Therefore, chose an average of 3.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	5

Describe the types of buildings in the area. Private residences are affected once you are within 2 miles from the installation boundary. The 105mm round was found within 1/2 mile from the installation boundary and residences.

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 4

Describe the site accessibility. The installation is fenced. However, the fence is in disrepair in parts of the boundary.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0

Site Dynamics (Select largest value) 5

Describe the site dynamics. It is planned that the installation will be surplused once it is cleaned in accordance with the BRAC process. The future use is unknown at this time.

TOTAL HAZARD PROBABILITY VALUE

(Sum of Largest Values for A through F--Maximum of 30) 27

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHNC-OE-ES--commercial (205) 895-1582.

RAC 2 High priority on completion of INPR - Recommend further action by CEHNC.

RAC 3 Complete INPR - Recommend further action by CEHNC.

RAC 4 Complete INPR - Recommend further action by CEHNC.

RAC 5 Usually indicates that no further action (NOFA)is necessary. Submit NOFA and RAC to CEHNC.

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Part IV. Narrative. Summarize the documented evidence that supports this Risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Camp Bonneville has been used as a rifle range since the early 1900's. Ranges include small arms (machine gun, pistol, rifle, infiltration courses, sub-machine gun, close combat course, etc), rockets, grenades (hand and rifle; 40mm grenades produced an orange puff of smoke), artillery (full size and sub-cal; 105mm to 155mm and smaller), mortars (full size and subcaliber training devices, 4.2 inch, 60mm, and 81mm). Training areas also encompassed the installation. Training with flares, signals, smoke screen, etc. could have occurred. Two demolition areas were located on Camp Bonneville. Both burning and detonation have been allowed. Chemical training

occurred at Camp Bonneville. It had two gas chambers and a 100 sq yd Mustard Training Area. Reference to a Gas ID area was also found on a map. Items found on the installation include, 105mm, 155mm, 2.36" rocket, 40mm grenades, phosphorous grenades, and 14.5mm subcal devices.

APPENDIX C

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